SARAH HOLLINGSWORTH LISANBY, M.D. CURRICULUM VITAE

Date of Preparation: 2/1/2011

Personal Data

Name: Sarah H. Lisanby, MD

Birth Place: Citizenship:

Academic Training

Duke University, B.S. -- dual degree in Mathematics and Psychology, Angier B. Duke Scholarship, Magna Cum Laude, Graduation with Distinction in Psychology, Doan's List with Distinction. Phi Bota Kappa

Distinction in Psychology, Dean's List with Distinction, Phi Beta Kappa. New College, Oxford University, U.K., Literature, Summer Session

supported by the Angier B. Duke Scholarship. Duke University School of Medicine, M.D.

Duke University, Psychiatry Residency (PGY1-4).

Duke University Executive Chief Resident in Psychiatry (PGY4).

Columbia University Postdoctoral Research Fellowship (T32)

Licensure

North Carolina Medical Board, Medical License.
 Drug Enforcement Agency License, New York State.
 New York State Medical Board, Medical License.

Board Certification

Diplomate, American Board of Psychiatry and Neurology Diplomate, Added Qualifications in Geriatric Psychiatry

Re-Certification, American Board of Psychiatry and Neurology

Military / Government Service

2009-present Consultant to the Food and Drug Administration: Neurological Devices Panel, Medical Devices Advisory Committee, and to the Center for Devices and Radiological Health

Professional Organizations and Societies

American Psychiatric Association Caucus of Psychiatrists Working With Deaf and Hard of Hearing Persons. 1995-present Executive Committee, Association for Convulsive Therapy. 1997-1997 Treasurer, Association for Convulsive Therapy. 1997-present Charter member, International Society of Transcranial Stimulation. 1999-2001 Vice President, Association for Convulsive Therapy. 1999-2001 Program Committee Chair, Association for Convulsive Therapy. 1999-2001 Program Committee Chair, Association for Convulsive Therapy. 1999-2003 American Association for Geriatric Psychiatry 1990-2003 American Association for Geriatric Psychiatry 1990-2003 American Psychiatric Institute for Research and Education Scientific Advisory Panel. 1990-2004 American College of Neuropsychopharmacology (ACNP) Associate Member. 1990-2004 Present Association for Convulsive Therapy. 1990-2005 Chair, American Psychiatric Association Committee on ECT and Related Electromagnetic Therapies. 1990-2006 Society for Biological Psychiatry, Program Committee Member. 1990-2006 American College of Neuropsychopharmacology (ACNP) Full Member. 1990-2007 American College of Neuropsychopharmacology (ACNP) Full Member. 1990-2008 American College of Neuropsychopharmacology (ACNP) Full Member. 1990-2009 American College of Neuropsychopharmacolo	1991-present 1993-1995 1993-1995	American Psychiatric Association North Carolina Psychiatric Association Education Task Force. Editorial Board Member of the Psychiatry Residents In-Training Exam (PRITE), American College of Psychiatrists
1995-1997 1997-1999 1997-present 1997-present 1999-2001 1999-2001 1999-2001 1999-2001 1999-2001 1999-2001 1999-2001 1999-2005 2000-2005 2000-present 2000-2003 2001-2004 2002-2004 2002-2004 2002-2004 2002-2008 2003-2005 2003-2005 2003-present 2003-present 2003-present 2003-present 2003-present 2003-present 2003-present 2003-present 2004-present 2004-present 2004-present 2004-present 2004-present 2004-present 2004-present 2006-present 2007-present 2008-present 2	1994-1995	
1997-1999 1997-present Charter member, International Society of Transcranial Stimulation. Vice President, Association for Convulsive Therapy. 1999-2001 Vice President, Association for Convulsive Therapy. 1999-2001 Program Committee Chair, Association for Convulsive Therapy. 2000-2005 American Association for Geriatric Psychiatry Editorial Board, Journal of ECT American Psychiatric Institute for Research and Education Scientific Advisory Panel. 2001-2003 American College of Neuropsychopharmacology (ACNP) Associate Member. 2002-2004 President, Association for Convulsive Therapy. Chair, American Psychiatric Association Committee on ECT and Related Electromagnetic Therapies. Society for Biological Psychiatry, Program Committee Member. American Psychiatric Association Task Force to Revise the Practice of Electroconvulsive Therapy. 2003-present American Psychiatric Association Council on Research. American College of Neuropsychopharmacology (ACNP) Full Member. Board of Directors, Association for Convulsive Therapy. President, International Society of Transcranial Stimulation Fellow, Association for Convulsive Therapy. ACNP Animal Research Committee Member. 4CNP Animal Research Committee Member. 4CNP Animal Research Committee Member. 4CNP Animal Research Committee Member. 4CRS on Non-pharmacologic Treatment of Depression International Federation of Clinical Neurophysiology (IFCN) Committee to Revise the International Guidelines on the Safety of TMS Chair, American Psychiatric Association Task Force to Revise the Practice of Electroconvulsive Therapy International Federation of Clinical Neurophysiology (IFCN)	1995-present	Executive Committee, Association for Convulsive Therapy.
1997-present 1999-2001 1999-2001 1999-2001 1999-2001 1999-2001 1999-2005 2000-2005 2000-2005 2000-present 2000-2003 2001 2000-2003 2001 2001 2001 2001 2002 2003 2001 2001	1995-1997	Treasurer, Association for Convulsive Therapy.
1999-2001Vice President, Association for Convulsive Therapy.1999-2001Program Committee Chair, Association for Convulsive Therapy.2000-2005American Association for Geriatric Psychiatry2000-2003Editorial Board, Journal of ECT2000-2003American Psychiatric Institute for Research and Education Scientific Advisory Panel.2001-2003American College of Neuropsychopharmacology (ACNP) Associate Member.2002-2004President, Association for Convulsive Therapy.2002-2008Chair, American Psychiatric Association Committee on ECT and Related Electromagnetic Therapies.2003-2005Society for Biological Psychiatry, Program Committee Member.2003-presentAmerican Psychiatric Association Task Force to Revise the Practice of Electroconvulsive Therapy.2003-presentAmerican Psychiatric Association Council on Research.2003-presentAmerican College of Neuropsychopharmacology (ACNP) Full Member.2004-presentBoard of Directors, Association for Convulsive Therapy.2004-presentPresident, International Society of Transcranial Stimulation2005-presentPresident, International Society of Transcranial Stimulation2006-presentACNP Animal Research Committee Member.2007-presentAgency for Healthcare Research and Quality (AHRQ) Technical Expert Group member for Comparative Effectiveness Reviews 	1997-1999	Secretary, Association for Convulsive Therapy.
1999-2001 2000-2005 2000-present 2000-2003 American Association for Geriatric Psychiatry 2000-2003 American Association for Geriatric Psychiatry 2000-2003 American Psychiatric Institute for Research and Education Scientific Advisory Panel. 2001-2003 American College of Neuropsychopharmacology (ACNP) Associate Member. 2002-2004 President, Association for Convulsive Therapy. 2002-2008 Chair, American Psychiatric Association Committee on ECT and Related Electromagnetic Therapies. 2003-2005 Society for Biological Psychiatry, Program Committee Member. American Psychiatric Association Task Force to Revise the Practice of Electroconvulsive Therapy. American Psychiatric Association Council on Research. American Psychiatric Association Council on Research. American Psychiatric Association For Convulsive Therapy. President, International Society of Transcranial Stimulation President, International Society of Transcranial Stimulation Fellow, Association for Convulsive Therapy. ACNP Animal Research Committee Member. 2006-present World Federation of Societies of Biological Psychiatry (WFSBP) Task Force on Brain Stimulation Charter Member. Agency for Healthcare Research and Quality (AHRQ) Technical Expert Group member for Comparative Effectiveness Reviews (CERs) on Non-pharmacologic Treatment of Depression International Federation of Clinical Neurophysiology (IFCN) Committee to Revise the International Guidelines on the Safety of TMS 2008-present International Federation of Clinical Neurophysiology (IFCN) Chair, American Psychiatric Association Task Force to Revise the Practice of Electroconvulsive Therapy International Federation of Clinical Neurophysiology (IFCN)	1997-present	Charter member, International Society of Transcranial Stimulation.
2000-2005 2000-present 2000-2003 American Association for Geriatric Psychiatry 2000-2003 American Psychiatric Institute for Research and Education Scientific Advisory Panel. 2001-2003 American College of Neuropsychopharmacology (ACNP) Associate Member. 2002-2004 President, Association for Convulsive Therapy. 2002-2008 Chair, American Psychiatric Association Committee on ECT and Related Electromagnetic Therapies. 2003-2005 Society for Biological Psychiatry, Program Committee Member. American Psychiatric Association Task Force to Revise the Practice of Electroconvulsive Therapy. 2003-present American Psychiatric Association Council on Research. American College of Neuropsychopharmacology (ACNP) Full Member. 2004-present Board of Directors, Association for Convulsive Therapy. President, International Society of Transcranial Stimulation Fellow, Association for Convulsive Therapy. ACNP Animal Research Committee Member. 2006-present ACNP Animal Research Committee Member. 2007-present Agency for Healthcare Research and Quality (AHRQ) Technical Expert Group member for Comparative Effectiveness Reviews (CERs) on Non-pharmacologic Treatment of Depression International Federation of Clinical Neurophysiology (IFCN) Committee to Revise the International Guidelines on the Safety of TMS 2008-present International Federation of Clinical Neurophysiology (IFCN)	1999-2001	Vice President, Association for Convulsive Therapy.
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Expert Group member for Comparative Effectiveness Reviews (CERs) on Non-pharmacologic Treatment of Depression International Federation of Clinical Neurophysiology (IFCN) Committee to Revise the International Guidelines on the Safety of TMS 2008-present Chair, American Psychiatric Association Task Force to Revise the Practice of Electroconvulsive Therapy International Federation of Clinical Neurophysiology (IFCN)	2006-present	
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2008-present Chair, American Psychiatric Association Task Force to Revise the Practice of Electroconvulsive Therapy 2008-present International Federation of Clinical Neurophysiology (IFCN)	2007-present	Committee to Revise the International Guidelines on the Safety of
2008-present International Federation of Clinical Neurophysiology (IFCN)	2008-present	Chair, American Psychiatric Association Task Force to Revise the
	2008-present	International Federation of Clinical Neurophysiology (IFCN)

2008-2010	Collegium Internationale Neuro-Psychoharmacologicum (CINP) International Scientific Programme Committee – Hong Kong 2010
2008-present	Co-Chair, TMS Certificate Course, Association for Convulsive Therapy.
2009-present	National Network of Depression Centers (NNDC) Research Domain Committee
2009-present	Chair, National Network of Depression Centers (NNDC) rTMS Work Group
2009-present	ACNP Credentials Committee
2010-present	National Network of Depression Centers (NNDC) Conference Planning Committee
2010-present	Duke Translational Research Institute (DTRI) Advisory Council

Academic Appointments

1998-2002	Assistant Professor of Clinical Psychiatry, Columbia University.
1998-2006	Laboratory Director, Magnetic Brain Stimulation, New York State Psychiatric Institute (NYSPI).
2002-2007	Associate Professor of Clinical Psychiatry, Columbia University.
2005-2006	Division Director, Brain Stimulation and Neuromodulation,
	Columbia University / New York State Psychiatric Institute.
2005-2010	Faculty of the Graduate School of Arts and Sciences, Department
	of Psychology, Columbia University.
2006-2010	Research Chief, Brain Stimulation and Therapeutic Modulation
	Division, Columbia University / New York State Psychiatric Institute.
2007-2010	Professor of Clinical Psychiatry, Columbia University.
2010-present	Chair, Department of Psychiatry and Behavioral Sciences, Duke
	University
2011-present	Professor of Psychiatry and Behavioral Sciences, Track II, with
	tenure, Duke University

Hospital Appointments

1995-2005	Staff Psychiatrist, Late Life Depression Clinic, Columbia University.
1995-2010	ECT Attending, New York State Psychiatric Institute.
1995-1998	Clinical Assistant Psychiatrist, New York Presbyterian Hospital, New York, NY.
1997-1999	Director of Emergency Medical Services, New York State Psychiatric Institute.
1997-2010	Research Psychiatrist II, New York State Psychiatric Institute.
1998-2010	Assistant Attending Psychiatrist, Columbia Presbyterian Medical Center.
1998-2005	Associate Director, NYSPI Dept of Biological Psychiatry PET Service

1998-2010	Founder and Director, Brain-Behavior Clinic, New York State Psychiatric Institute.
2002-2010	Head of the TMS Unit in the fMRI Research Center, Columbia University.
2004-2005	Medical Director, Columbia Depression Developing Center.
2004-2010	Founder and Director, Brain Stimulation Service, Department of Psychiatry, New York Presbyterian Hospital, New York, NY.
2006-2010	Director, ECT Service Line, New York Presbyterian Hospital, New York, NY.
2006-2010	Director, Brain Stimulation Service Line, New York Presbyterian Hospital, New York, NY.

Honors

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	National Merit Finalist. Angier B. Duke Memorial Full Tuition Merit Scholarship to Duke University and New College, Oxford University.
	Phi Eta Sigma. Early Identification Program (EIP) for early acceptance to Duke Medical School.
	Faculty Scholarship awarded by the Duke University Academic Council for academic excellence and independent scholarship. Phi Beta Kappa.
	Karl E. Zener Award for Outstanding Performance in Psychology, Duke University.
	Hewlett Packard Award for Medical Scholastic Achievement, Duke University Medical School.
	American Medical Women's Association Award for Scholastic Achievement, Duke University Medical School. Rauch Travel Fellowship.
	Medical Student Teaching Award, Duke University Medical Center. American College of Psychiatrists PRITE Fellowship.
	American College of Psychiatrists Editorial Board Member of the PRITE (Psychiatry Residents In-Training Exam).
	Resident Fellow of the American Psychoanalytic Association. National Alliance for Research on Schizophrenia and Depression (NARSAD) Young Investigator Award.
1996 1997	American Association for Geriatric Psychiatry Summer Research Institute. Invited lecturer, Transcranial Magnetic Stimulation Course, Beth Israel
	Deaconess Medical Center, Harvard Medical School, Boston, MA.
1997	Invited lecturer, the International Conference on Transcranial Magnetic Stimulation, Interlaken Switzerland.
	Lilly Fellowship Award of the Society of Biological Psychiatry. American College of Neuropsychopharmacology ACNP / Bristol-Myers Squibb Travel Fellowship.

1998	Invited lecturer, the First International Symposium on Transcranial Magnetic Stimulation, 1998 German Neurophysiological Society annual meeting, Götttingen, Germany.
	HealthEmotions Research Institute Scholar.
1999	Invited lecturer, University of Hokkaido, Soporo, Japan.
1999	Lowenbach Lecturer, Duke University Department of Psychiatry.
2000	APA/SmithKline Beecham Young Faculty Award for Exceptional Promise in Biological Psychiatry.
2000	American College of Neuropsychopharmacology, elected to Associate Membership.
2001	Klerman Award, National Alliance for Research in Schizophrenia and Depression (NARSAD).
2002	EEG and Clinical Neuroscience Society (ECNS) Early Career Award
2002	National Depression and Manic Depression Association (NDMDA) Gerald L. Klerman Junior Investigator Award.
2003	Invited lecturer, the Second International Symposium on Transcranial Magnetic Stimulation, Götttingen, Germany.
2003	Beeson Physician Faculty Scholars Award, American Foundation for Aging Research (AFAR).
2004	Collegium Internationale Neuro-Psychoharmacologicum (CINP) Max Hamilton Memorial Prize.
2005-2007	Defense Sciences Study Group – Selected by the Institute for Defense Analysis and DARPA
2008	Association for Convulsive Therapy Honored Speaker Award
2008	Invited lecturer, the Third International Symposium on Transcranial
	Stimulation, Götttingen, Germany.
2008-2009	Fellow, Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women
2009	Finalist for the Staglin Rising Star Award of the International Mental Health Research Organization
2009	NARSAD Distinguished Investigator Award.

NIH Study Section Memberships

Standing Member:	
2004-2010	NIH CSR NPAS, Neural Basis of Psychopathology, Addictions and
	Sleep Disorders Study Section, Brain Disorders and Clinical
	Neuroscience Integrated Review Group
2006-2008	NIH ZRG1 MDCN-K(50/1), Neurotechnology and Neuroengineering
2009-present	NIH ZMH1 ERB-F 01 S, Silvio O. Conte Centers for Basic and
	Translational Mental Health Research
2009-present	ZRG1 BDCN-C 95 S, Clinical Addiction and Psychopathology
2009-present	ZMH1 ERB-L (08), NIMH Novel Interventions for
	Neurodevelopmental Disorders RFA Review MH 09-060/1
2010-present	Emerging Technologies and Training Neurosciences Integrated
·	Review Group – Neurotechnology (NT) Study Section

2010 2010	ZRG1NT-B Neurotechnology 2 Overflow ZRG1 ETTN-B – ARRA: Neurotechnology-4 Competitive Revisions
2010	ZROTETHI-B - ARRA. Neurotechnology-4 Competitive Revisions
Ad Hoc Reviewer:	
2003	Integrative, Functional And Cognitive Neuroscience 1 Study Section
	(IFCN1) Special Emphasis Panel
2004	NINDS Language and Communication Study Section (LCOM)
2004	NINDS ZNS1 SRB-H (19)
2005	NIDA ZDA1 MXS-M 01 1
2006	NIH ZRG1 SBIB-J 51R, In Vivo Imaging and Bioengineering Research
2010	NIH ZRG1 BDCN-N (04) M, Member Conflict: Pharmacology, Plasticity
	and Mental Disorders II

Other Grant Review Committees

Veterans Administration
Food and Standards Agency of the UK
Israel Science Foundation
Ontario Mental Health Foundation
Australian NHMRC
Cure Autism Now
Israel Health Research Board
Austrian Science Fund
Autism Speaks – Science Treatment Grant Review panel 2006-2008

Editorial Board Memberships

Journal of ECT
International Journal of Neuropsychopharmacology
Brain Imaging and Behavior
International Journal of Geriatric Psychiatry
CNS Spectrums

Guest Editor

Special issue of *Depression and Anxiety* on ECT and TMS, 2000. *Biological Psychiatry*, 2002. Special issue of *Journal of ECT* on TMS, 2009

Peer Reviewer

Archives of General Psychiatry American Journal of Geriatric Psychiatry American Journal of Psychiatry Biological Psychiatry Bipolar Disorders Cerebral Cortex

Depression and Anxiety

Epilepsia

International Journal of Neuropsychopharmacology

Journal of ECT

Journal of Neural Transmission,

Journal of Neuroscience

Journal of Psychiatric Research

Proceedings of the National Academy of Sciences

Progress in Neuro-psychopharmacology & Biological Psychiatry

Psychiatry Research

Science

Fellowship and Grant Support

ACTIVE

NIMH 2R01 MH60884-05 (Principal Investigator=Lisanby) 20% effort

12/1/03-3/31/11

TDC \$1,945,128

Magnetic Stimulation Therapy: A New Convulsive Treatment

This project is a competitive renewal of MH60884-04. This project employs an animal model (rhesus monkey) to establish the feasibility and safety of magnetic seizure induction as a novel convulsive treatment, and compare its cognitive, physiological, and neuropathological effects with electroconvulsive shock (ECS).

Research Grant (Principal Investigator=Lisanby)

1/1/05-10/31/10

5% effort

Total Cost \$490,500

Department of Defense: Defense Advanced Research Projects Agency (DARPA)

From the Lab to the Field: Transcranial Direct Current Stimulation for Memory Enhancement This pilot project tests whether the new noninvasive modality of direct current polarization, which has been shown to potentiate firing rates and enhance verbal fluency, can enhance working memory in normal volunteers, and whether it can remediate the effects of sleep deprivation. It also tests other means of taking brain stimulation out of the traditional laboratory setting, including testing whether the brain effects of TMS are amenable to classical conditioning.

Research Grant (Principal Investigator=Lisanby)

1/1/05-1/1/10

5% effort

Department of Defense: Defense Advanced Research Projects Agency (DARPA) \$200,000

Deception Disruption

This pilot project tests whether TMS can disrupt performance on tasks of simulated deception when applied to circuits identified via fMRI to be central to the ability to inhibit truthful responses.

Research Grant (coPIs: Lisanby, Stern)

1/1/05-10/31/10

Total Cost \$637,000

Department of Defense: Defense Advanced Research Projects Agency (DARPA)

Effect of Sleep Deprivation on FMRI-Measured Cognitive Networks

This CU Psychiatry subcontract from the Sergievsky center DARPA funded program investigates the use of fMRI-guided TMS to modulate sleep deprivation sensitive working memory networks to remediate performance. The project also supports the implementation of simultaneous fMRI/TMS to study network modulation on-line.

Stanley Medical Research Institute Grant (Principal Investigator = Lisanby) 7/1/05-7/1/11

Magnetic Seizure Therapy (MST) for the Treatment of Depression

This 2-center trial study tests the comparative efficacy and side effects of two different forms of MST (with various coil placements) versus ECT in a randomized double-masked controlled trial.

NARSAD Young Investigator Award (PI= Stanford; Mentor=Lisanby)

7/1/05-7/1/11

As needed

Restoring function: Repetitive transcranial magnetic stimulation for the negative symptoms of schizophrenia

This sham-controlled randomized clinical trial will examine whether rTMS can be of clinical benefit in treating negative symptoms in schizophrenia patients, with a special emphasis on social dysfunction.

Research Grant (Principal Investigator=Lisanby)

1/1/06-1/1/11

Cyberonics

<u>Treatment</u> Resistant Depression Patient Registry Study

This study follows patients receiving VNS or treatment as usual and tracks their long-term outcomes.

Research Grant (Principal Investigator=Lisanby)

1/1/06-11/25/10

Cyberonics

Randomized trial of different levels of electrical charge in VNS treatment of depression (D21 study)

This study contrasts the antidepressant efficacy of 3 dosages of VNS in the treatment of medication resistant depression.

NY State Office of Science, Technology and Academic Research (NYSTAR) Faculty
Development Award (PI=Lisanby) 11/1/06-11/1/10

TDC Total Project Cost Share/Match:

Shaping The Future of Therapeutic Neuromodulation

This project aims to advance the technology and application paradigms of electric and magnetic brain stimulation and neuromodulation, and facilitate its commercialization.

NIMH K23 MH076976 (Mentor-Lisanby; PI-Stanford)

12/1/06-11/30/11

TDC \$819,700; Total Costs \$885,275

Negative symptoms of schizophrenia: From phenomenology to targeted treatment This study uses TMS as a probe of the neural circuitry of negative symptoms and as a putative treatment.

R21 MH082323 (PI: Leckman; PI of Columbia/NYSPI site: Lisanby)

10/1/07-10/1/10

Transcranial magnetic stimulation for adults with severe Tourette Syndrome
This collaborative project between Columbia and Yale will use low frequency rTMS to the supplementary motor area for the study and treatment of medication resistant Tourette Syndrome.

<u>Advanced Neuromodulation Systems (PI-Lisanby)</u>

3/20/08 -3/20/11

Clinical Evaluation for the Management of patients with major depressive disorder, single or recurrent episode, with deep brain stimulation

This study examines the antidepressant efficacy of deep brain stimulation (DBS) applied to Broadman's 25.

NINDS K01 NS062116 (PI: Friel; co-Mentors: Martin, Lisanby, Gordon) 4/1/08 – 3/31/11 \$853,389

Mechanisms of cerebral palsy recovery induced by balancing motor cortex activity
This study uses TMS to examine the mechanisms of action of unimanual practice in improving
motor function in cerebral palsy, testing a model of deficient interhemispheric balance in motor
cortical excitability developed in the cat model.

NIA K01 AG031912 (PI: Luber; co-Mentors: Lisanby and Stern)

4/1/08 - 3/31/11

Neural basis of cognitive reserve: fMRI/TMS studies of memory and aging This Mentored Research Scientist Development Award (K01) will provide Dr. Bruce Luber with the necessary training and skills to become an independent investigator with expertise in the neural basis of cognitive reserve, applying innovative tools (e.g., fMRI-guided TMS) that may ultimately lead to novel interventions for age related memory loss.

NARSAD Young Investigator Award (Co-Mentor=Lisanby, PI= McClintock) 7/1/08-6/30/11 National Alliance for Research on Schizophrenia and Depression

Neuropsychological associated effects of magnetic seizure therapy (MST)

This project examines the neuropsychological profile of MST versus ECT in the treatment of major depressive episodes.

Pilot Research Award (PI: Mantovani, Co-I: Lisanby) 7/1/08-7/1/11

OC Foundation

Optimization of TMS in OCD: A sham-controlled randomized clinical trial of MRI-guided TMS This is the first study that will test the efficacy of MRI-guided 1Hz TMS applied to the pre-SMA in OCD patients who have not fully responded to conventional therapies.

Advanced Neuromodulation Systems (PI-Segal; Co-I: Lisanby) 10/30/08 -10/30/10

Brodmann Area 25 Deep Brain Stimulation (DBS) Elicits Dopaminergic and Serotonergic responses: Characterization of Biomarkers with Molecular imaging and a novel PET Ligand This study uses PET to examine the mechanisms of action of DBS in the treatment of depression.

NIH U01MH084241 (coPIs: Lisanby and Kellner)

4/1/09-3/31/14

\$1,608,160

NIMH

Prolonging Remission in Depressed Elders (PRIDE)

This project studies post-ECT relapse prevention strategies, and the neurobiological markers of relapse.

CTSA Pilot Study Award (PI: Rowny, co-I: Lisanby)
Irving Institute for Clinical and Translational Research

7/1/09-7/1/10

Functional neuroanatomy changes during ECT vs. MST in geriatric depression This project will shed light on the mechanisms of action of convulsive therapy, providing the first test of whether regional differences in the neural response to seizures results in differential clinical effects on depression and cognitive function.

NARSAD Young Investigator Award (PI: Segal, co-Mentors: Lisanby, Parsey) 7/1/09-7/1/11

Brodmann Area 25 directed deep brain stimulation for the treatment of major depression disorder: Neurocircuitry studies

Receptor PET will be used to examine the impact of DBS to BA25 on DAergic and 5-HTergic systems implicated in depression.

Brainsway (PI: Lisanby)

7/1/09-7/1/11

A Prospective Multicenter Double Blind Randomized Controlled Trial to Explore the Tolerability, Safety and Efficacy of the H-Coil deep Transcranial Magnetic Stimulation (TMS) in Subjects with Major Depression Disorder (MDD)

CTSA Pilot Study Award (PI: Mantovani, co-I: Lisanby) Irving Institute for Clinical and Translational Research

7/1/09-7/1/11

Modulation of premotor and motor circuits in Obsessive-Compulsive Disorder (OCD): a Transcranial Magnetic Stimulation (TMS) and Magnetic Resonance Spectroscopy (MRS) study This project will examine the impact of low frequency TMS applied to the supplementary motor area on cortical GABA as assessed via MRS.

NARSAD Independent Investigator Award (PI: Prudic, col: Lisanby) 9/15/09-9/14/11

Cognitive Remediation to Improve Functional Outcomes Following Depression Treatment This project examines a novel cognitive remediation protocol specifically designed to mitigate the adverse cognitive side effects of ECT.

NARSAD Young Investigator Award (PI: Rowny, Mentor: Lisanby) 1/1/10-12/31/11

Functional neuroanatomy changes during ECT vs. MST in geriatric depression This project will shed light on the mechanisms of action of convulsive therapy, providing the first test of whether regional differences in the neural response to seizures results in differential clinical effects on depression and cognitive function.

Research Grant (PI=Chen; CoI=Lisanby)

1/01/10-6/30/10

Irving Institute Imaging Pilot Award

GABA, neuronal synchrony, and neurocognitive efficiency in schizophrenia The aim of this study is to further our understanding of the pathophysiology of schizophrenia and to identify novel therapeutic targets for remedying cognitive deficits.

2010 NARSAD Distinguished Investigator Award (PI= Lisanby)

5/1/10-4/30/11

NARSAD

Noninvasive Focal Deep Brain Stimulation

This project evaluates the feasibility of using anatomical and functional connectivity measures to noninvasively activate focal deep brain targets for depression treatment.

Diversity Award (PI: Friel, Mentor: Lisanby)

5/1/10-4/30/11

Columbia University

Magnetic Resonance Imaging of the Motor and Somatosensory Systems in Children with Cerebral Palsy and Healthy Controls

2010 Pisetsky Award (PI: Chen, Mentor: Lisanby)

5/14/10-5/14/11

Investigation and treatment of auditory/verbal hallucinations in schizophrenia: a combined TMS-EEG approach

This pilot will test whether connectivity between Broca's area and auditory cortex is abnormal in schizophrenia.

<u>1S10 RR027</u>745-01 (PI: Luber, Co-I: Lisanby) 6/15/10-6/14/11

Precision Targeting of fMRI-Guided TMS Using a Robotic Arm System
This Shared Instrumentation Grant will enable the installation and implementation of a Robotic
Arm System for precise targeting of image- guided noninvasive brain stimulation via
transcranial magnetic stimulation (TMS) for the study of brain behavior relationships,
pathophysiology of brain-based disorders, and intervention development trials.

\$3-01 (Pls: Lisanby and Peterchev)

7/1/10-6/30/15

Rational Dosing for Electric and Magnetic Seizure Therapy

This translational project will develop a novel framework to optimize the dosing of seizure therapies for the treatment of medication resistant disorders.

K23 (PI: McClintock, co-Mentors: Lisanby, Husain)

7/1/10-6/30/15

NIMH \$667.559

Translational Research Evaluating Neurocognitive Memory Processes (TREC-MP)
The objective of this career development award is for the candidate to become a proficient translational neurocognitive scientist. The long-term goal is for this translational neurocognitive research to provide a clearer understanding of the cognitive component processes that underscore cognitive functional impairments in order to develop targeted treatment interventions.

PENDING





PRIOR FUNDING

5R01MH035636 (co-Investigator=Lisanby; PI=Sackeim)

7/1/95-3/1/05

10% effort

NIMH

Total Costs \$2,822,615

Affective and Cognitive Consequences of ECT

This randomized controlled trial contrasted the efficacy and side effects of various forms of ECT.

T32 MH15144 (Principal Investigator=Rieder)

7/1/95-12/1/98

80% effort

NIMH

\$33,012

Post Doctoral Clinical Fellowship in Affective and Related Disorders

This post doctoral clinical fellowship supported my research training in a combination of interventional (ECT, rTMS), neurophysiological, neuroanatomical, and neuroimaging (PET) skills which were applied in integrated nonhuman primate and human investigations, focused on the neurobiology of emotion.

Established Investigator Award (co-Investigator=Lisanby; PI=Sackeim) 5/1/96-4/30/98

NARSAD

Focal Magnetic Brain Stimulation: Development of a New Treatment
This project involves development of a new rapid-rate magnetic stimulation device and
evaluating its potential to induce focal seizures in primates, including measures of intracerebral
current density.

Frontier Fund (co-Investigator=Lisanby; PI=Luber)

5/1/96-4/30/97

New York Research Foundation for Mental Hygiene

The neural basis of backward masking deficits in schizophrenia

This protocol employs the focal intervention of TMS to study aspects of visual information processing deficits in patients with schizophrenia.

PIRSG (Principal Investigator=Lisanby)

5/1/96-4/30/99

New York Research Foundation for Mental Hygiene

Safety of Rapid-Rate Transcranial Magnetic Stimulation (rTMS) in Normal Volunteers This protocol systematically studies the physiological and neuropsychological effects of rTMS in normal volunteers to investigate the safety of this technique to study and treat psychiatric disorders.

NARSAD Young Investigator Award (Principal Investigator=Lisanby)

National Alliance for Research on Schizophrenia and Depression

7/1/96-6/30/99

The Neurobiology of Emotional Processing and the Treatment of Mood Disorders: Transcranial Magnetic Stimulation Studies

This project involves the establishment of reliable methods for using rTMS to probe the processing of emotional information and to alter mood in normal volunteers and patients with major depressive disorder.

R01 MH55646:01 (co-Investigator=Lisanby; Principal Investigator=Sackeim) 1/1/97-12/31/01 As needed

NIMH

\$ 311,268

Cerebrovascular Abnormalities in Late-Onset Depression

This longitudinal project involves investigation of cerebral perfusion and metabolism deficits (PET) and structural deficits (MRI) in patients with late-onset major depression treated with sertraline. My role is to coordinate all aspects of the clinical conduct and imaging procedures in the study.

Research Grant (co-PI=Lisanby; Principal Investigator=Sackeim)

7/1/97-6/30/99

Magstim Company Ltd

Augmentation of antidepressant medication with rapid-rate transcranial magnetic stimulation. This randomized, controlled, blinded, two-center study examined the utility of 2 weeks of TMS as an augmentation strategy for sertraline therapy of major depressive disorder.

Research Grant (co-PI=Lisanby; PI=Sackeim)

7/1/97-6/30/99

Pfizer Inc.

Augmentation of antidepressant medication with rapid-rate transcranial magnetic stimulation. This randomized, controlled, blinded, two-center study examined the utility of 2 weeks of TMS as an augmentation strategy for sertraline therapy of major depressive disorder.

K08 MH01577 (Principal Investigator=Lisanby)

12/1/98-11/30/03

75% effort

NIMH

\$730,600

Neurobiology of Emotional Processes: rTMS Studies

This Mentored Clinical Scientist Development Award involves the establishment of reliable methods for using rTMS to probe the neural circuits regulating mood in normal volunteers. It also involves the use of pre-clinical models to validate the use of repetitive transcranial magnetic stimulation (rTMS) in the study of brain-behavior relationships.

R01 NS38636 (co-Investigator=Lisanby; Principal Investigator=Fallon) 4/1/

4/1/99-3/31/03

As needed

NINDS

\$3,111,690

PET and MRI Imaging of Persistent Lyme Encephalopathy

This study examines cerebral blood flow and metabolism deficits that characterize Lyme's disease.

R01 MH60884-01 (Principal Investigator=Lisanby)

12/1/99-11/30/03

20% effort

NIMH

\$1,031,002

Magnetic Stimulation Therapy: A New Convulsive Treatment

This project employs an animal model (rhesus monkey) to establish the feasibility and safety of magnetic seizure induction as a novel convulsive treatment, and compare its cognitive, physiological, and neuropathological effects with electroconvulsive shock (ECS).

<u>Clinical Trials</u> Award (Principal Investigator=Lisanby)

7/1/00-7/1/01

Columbia University

Magnetic Stimulation Therapy (MST): Feasibility of a novel convulsive technique The aims of this first clinical trial of MST in the human are to demonstrate the feasibility of magnetic seizure induction (MST) as an alternative to ECT and to compare the acute cognitive side effects of MST and conventional ECT.

Unrestricted Grant (Awardee=Lisanby)

7/1/00-7/1/01

APA/SmithKline Beecham

APA/SmithKline Beecham Award 2000 Awardee

Cure Autism Now (Principal Investigator=Lisanby)

3/1/01-3/1/02

As needed

New York Research Foundation for Mental Hygiene

Low frequency transcranial magnetic stimulation in the investigation of self awareness in adults with Asperger's disorder.

The goal of this project is to test the utility of TMS delivered to the right prefrontal cortex in improving symptoms of autism and in various aspects of self awareness and self recognition.

Frontier Fund (Faculty sponsor=Lisanby; Principal Investigator=Matthews) 5/1/01-4/30/02 As needed

New York Research Foundation for Mental Hygiene

Motion Perception in Schizophrenia

We have used TMS to the human area MT to selectively disrupt aspects of motion perception (speed and direction discrimination) in normal volunteers. We now extend this work to study the neurobiology underlying motion perception abnormalities in schizophrenia.

PIRSG (Faculty sponsor=Lisanby; Principal Investigator=Moscrip)

5/1/01-4/30/02

As needed

New York Research Foundation for Mental Hygiene

Cognitive side effects of TMS and ECS

The goal of this project is to develop cognitive tasks in the rhesus monkey to assess anterograde and retrograde amnestic effects of magnetically and electrically induced seizures.

Stanley Foundation Research Grant (Principal Investigator = Lisanby)

8/1/01 - 7/31/05

As needed

Stanley Foundation

Magnetic Seizure Therapy (MST) for the Treatment of Depression: A Pilot Randomized Trial This study tests the comparative efficacy and side effects of three different forms of MST (with various coil placements) in a randomized double-masked controlled trial to identify the MST method with the best efficacy/side effect tradeoff.

John F. Kennedy Institute, Denmark (Principal Investigator=Lisanby)
As needed

9/1/01-9/1/07

TMS studies of self-awareness

Supported the sabbatical work of Professor Hans Lou, and continuing collaboration with him, on the roles that lateral prefrontal and parietal brain regions play in performing tasks that measure aspects of self-awareness.

Research Grant (Principal Investigator of NYSPI site=Lisanby; co-PI of project=Lisanby, PI of project=Stern)

4/1/02-8/31/03

15% effort

Department of Defense: Defense Advanced Research Projects Agency (DARPA)

\$1,052,024

FMRI/TMS Approaches To Enhancing Performance During Sleep Deprivation

This multi-project program employs convergent methods to identify and remediate the effects of sleep deprivation on aspects of cognitive performance. The TMS core utilizes TMS as a probe of networks identified with fMRI, and as a tool to alter network expression for desired behavioral outcomes.

R21 MH066748 (co-Investigator=Lisanby; Principal Investigator=Gorman) 7/1/02-6/30/04 As needed

NIMH

\$300,000

Neural circuitry of social behavior in bonnet macaques

This project explores the fundamental neurobiology of social behavior using a primate animal model.

NARSAD Young Investigator Award (Mentors= Lisanby, Dwork, PI=Ilievski) 7/1/02-6/30/05

NARSAD

Golgi Studies of Electroconvulsive and Magnetically-Induced Seizures

This project examines the role of dendritic changes in the hippocampus in the mechanism of action of convulsive therapy (both conventional electrical seizure induction and magnetic seizure therapy (MST)) in the rhesus monkey model.

Beeson Physician Faculty Scholars in Aging Research Program (PI=Lisanby) 4/1/03-3/31/08

American Federation for Aging Research

Brain Stimulation and Pharmacological Strategies to Reduce the Cognitive Side Effects of ECT in Geriatric Depression

This project studies the use of magnetic seizure therapy, along with anticholinergic agents, as strategies to reduce the cognitive side effects of ECT in the elderly population.

NARSAD Young Investigator Award (PI=Waterhouse; CoI=Lisanby) 7/1/03-6/30/05

PET Assessment of the effect on gonodal hormones on stimulated dopamine release in humans.

NIMH T32 (Principal Investigator=Roose; Faculty Mentor =Lisanby) 7/1/03 – 6/30/10

Annual TDC\$278,912; Total Costs \$299,579; Project \$2,403,526

Clinical Research Training in Geriatric Psychiatry

Preceptor for postdoctoral fellowship program in geriatric psychiatry.

NARSAD Independent Investigator Award (PI=Lisanby) 8/1/03-8/1/05

National Alliance for Research in Schizophrenia and Depression

Magnetic seizure therapy for the treatment of major depression

This project supports a randomized clinical trial on the antidepressant efficacy of two forms of MST.

Research Grant (Principal Investigator = Lisanby)

9/1/03-9/1/04

John F. Kennedy Institute, Denmark

TMS studies of self-awareness

This grant will support the sabbatical work of Professor Hans Lou on the topic of the roles that lateral prefrontal and parietal brain regions play in performing tasks that measure aspects of self-awareness.

Research Grant (Principal Investigator =Lisanby)

11/13/03-11/13/08

Neuronetics

Randomized controlled trial of rTMS in patients with major depression

This is a 16-center randomized controlled trial of the antidepressant efficacy of repetitive transcranial magnetic stimulation (rTMS) in the treatment of unipolar major depression. The results of this pivotal trial will be submitted to FDA to determine whether rTMS can be approved for the treatment of depression.

Unrestricted Grant (PI=Lisanby)

4/1/04-9/1/05

Magstim Company Ltd

Magnetic Seizure Therapy (MST) for the Treatment of Depression: A Pilot Randomized Trial This study tests the comparative efficacy and side effects of three different forms of MST (with various coil placements) in a randomized double-masked controlled trial to identify the MST method with the best efficacy/side effect tradeoff.

NIMH T32 (PI: Salzman; Faculty Mentor: Lisanby)

7/7/04-6/30/09

Total Cost: \$2,698,032

Research Training: Affective and Related Disorders

This is a postdoctoral research training grant on which I serve as a faculty mentor.

NIH Predoctoral Fellowship (PI: Moscrip; Mentors: Lisanby & Terrace) 1/1/04-12/31/05 \$45.436

Neurocognitive Effects of Convulsive Therapy in Primates

This was a predoctoral fellowship to support the doctoral thesis work for Tammy Moscip, leading her her PhD in Experimental Psychology mentored by Drs. Lisanby and Terrace.

NIMH R01 MH069895-01 (Principal Investigator=Lisanby)

9/15/04-5/31/10

20% effort

TDC \$1,329,809

Optimization of TMS for Depression

This is a Clinical Site Grant (CSG). This proposal is a 4-yr, 4-site, randomized sham-controlled trial of daily left prefrontal repetitive transcranial magnetic stimulation (rTMS) for the acute treatment of major depression.

Medical Research Council Brain Sciences II (PI=Ebmeier)

4/1/05 - 4/1/08

Reducing adverse ECT effects on memory by magnetic stimulation

This study examines the relative safety and efficacy of MST and ECT in the community setting in ECT centers in Scotland.

NARSAD Young Investigator Award (PI=Scalia; co-Mentor=Lisanby)

7/1/05-7/1/07

The Neurobiology of Depressive Disorder: Hippocampal Neurogenesis and Serotonin Replacement Therapy in Human Brain

This study uses doublecortin as a measure hippocampal neurogenesis in brains from three groups: individuals diagnosed with major depressive disorder (MDD) and not on antidepressants; those diagnosed with MDD who received SSRI therapy; and non-psychiatric controls. We will thus determine whether individuals who suffered from MDD experienced a deficit in hippocampal neurogenesis and whether SSRI therapy effectively corrected this deficit.

NARSAD Young Investigator Award (PI=Berman; Mentors=Lisanby, Sackeim) 7/1/05-7/1/07

Novel methods of focal brain stimulation: Preclinical characterization and a pilot study for depression

As needed

This study contrasts electrical and magnetic approaches to focal brain stimulation using intracerebral electrode studies in rhesus monkey.

Young Investigator Award (Pl= Narendran; co-Mentor=Lisanby) 7/1/05-7/1/07

Probing the connectivity between the dorsolateral prefrontal cortex (DLPFC) and striatum in schizophrenia

This study will investigate the functioning of the connection between the prefrontal cortex and the striatum first in healthy subjects and then in patients with schizophrenia, using rTMS and raclopride PET. Understanding the abnormalities in this connection may lead to better treatment for schizophrenia.

Research Grant (Principal Investigator=Lisanby)

1/1/06-1/1/09

Cyberonics

Intracortical inhibition following VNS for the treatment of depression

This study uses paired pulse TMS to examine the effects of VNS on measures of GABAergic activity in patients with depression.

Research Grant (Principal Investigator=Kegeles; Co-PI=Lisanby)

1/1/06-1/1/09

Dana Foundation

Mapping abnormal excitatory and inhibitory neurochemical circuitry in schizophrenia with MRS and rTMS

This study uses different frequencies of rTMS as probes to examine GABA and glutamate activity in prefrontal cortex of patients with schizophrenia, measured by MRS.

NIH Loan Repayment Program (PI-Stanford; Mentor-Lisanby)

2006-2010

This is a loan repayment grant to Dr. Stanford for her mentored research in Dr. Lisanby's lab.

Grant (Principal Investigator =Lisanby)

4/1/06-4/1/07

Neuronetics

Compassionate use of rTMS for the treatment of Depression

This study examines the use of repeat application of rTMS in patients with depression who have previously responded to TMS.

NIDA Administrative Supplement to R01 MH069895-01

6/1/06-5/21/09

Total Project Cost: \$300,000; CU Sub-contract \$47,745

This administrative supplement examines the impact of prefrontal rTMS on craving and measures of nicotine utilization.

NARSAD Young Investigator Award (Mentor= Lisanby, PI= Bulow)

7/1/06-6/30/09

Transcranial Direct Current Stimulation for the Treatment of Depression

This project examines the antidepressant efficacy of direct current stimulation of the prefrontal cortex.

Janssen Translational Neuroscience Fellowship (PI-Stanford; Mentor-Lisanby) 7/1/06-6/30/07

Cognition and the D1R in Schizophrenia

This is a PET and TMS study of the role of dopamine receptors in cognitive functioning in schizophrenia, before and after treatment with TMS.

Lieber Center (PI-Lisanby)

4/1/07-6/31/10

Working Memory Deficits: GABA to Gamma to Function – Part I

This is a two-part study utilizing TMS and MRS to examine the links between cortical GABA levels, gamma oscillations, and working memory function. Part I tests the impact of prefrontal

rTMS on working memory function, gamma oscillations, and MRS GABA levels in schizophrenic patients.

<u>Lieber Center (coll-Lisanby; Pl-Kegeles)</u>

4/1/07-6/31/10

Working Memory Deficits: GABA to Gamma to Function – Part II

This is a two-part study utilizing TMS and MRS to examine the links between cortical GABA levels, gamma oscillations, and working memory function. Part II examines normal volunteers to identify TMS paradigms that can manipulate gamma oscillations, and then tests the resultant impact on function and GABA levels using MRS.

NIH TRANSFORM K12 (Mentor-Lisanby; PI-Sporn)

1/1/07-12/31/09

TDC \$500,000

Neurocircuitry of Autism Spectrum Disorders: fMRI and TMS studies

This study employs TMS and fMRI to probe the neural basis of symptom clusters in autism spectrum disorders.

Research Grant (Principal Investigator=Lisanby)

1/1/07-1/1/10

Department of Defense: Defense Advanced Research Projects Agency (DARPA)

\$63,659 [Supplement to "From the Lab to the Field"]

TMS-Enhanced 'Power-Nap": A practical system for inducing slow oscillations during sleep This pilot project will design a TMS coil that can be comfortably worn during sleep to augment slow wave oscillations duration sleep and hasten memory consolidation during TMS-augmented sleep.

Blum Foundation (PI-Lisanby)

3/1/07-no end date

Brain Stimulation Education Fund

This charitable donation from the Blum Foundation was designated to create an education fund to support a journal club and lecture series on brain stimulation topics in psychiatry.

NIMH T32 (Principal Investigator=Rieder; Mentor Faculty=Lisanby)

7/1/07-6/30/08

Annual TDC \$353,672; Annual Total Cost \$380,244

Schizophrenia Research Fellowship

Preceptor for postdoctoral fellowship program in schizophrenia research.

Tourette Syndrome Association (coPIs Lisanby and Leckman)

7/1/07-7/1/09

Transcranial magnetic stimulation for adults with severe Tourette Syndrome
This collaborative project between Columbia and Yale will use low frequency rTMS to the
supplementary motor area for the study and treatment of medication resistant Tourette
Syndrome.

Cure Autism Now Foundation (PI: Sporn; Mentor: Lisanby)

7/1/07-7/1/09

Transcranial magnetic stimulation (TMS) for the evaluation and treatment of repetitive behavior in subjects with autism spectrum disorders

This project couples TMS with fMRI to develop novel treatment approaches for specific symptom clusters in autism.

Frontier Fund (PI: Peterchev; Mentor: Lisanby)

7/1/07-12/31/09

Synchronization of TMS to electroencephalographic rhythms

This project will construct and test technology to synchronize TMS delivery to specific phases of endogenous oscillations.

Frontier Fund (PI: Mantovani; Mentor: Lisanby)

7/1/07-12/31/09

Neural Circuitry of Depersonalization Disorder: A TMS Study

This pilot project tests for the first time the potential value of TMS to temporal parietal cortex in the treatment of depersonalization disorder.

NBIB R21 EB005855 (coPI-Lisanby; PI-Peterchev)

7/1/07-07/01/09

TDC \$275,000

Development of A Novel TMS Device with Controllable Pulse Shape

This project will implement a novel TMS device with controllable pulse shape, with more physiologically efficient parameters.

CUNY Dissertation Enrichment Grant (PI-Ferrera; Mentors-Lisanby, Hirsch) 7/1/07 - 7/1/08

Mapping the eloquent language-sensitive brain using fMRI-guided rTMS This study uses fMRI and rTMS to map language processing, with the goal of developing presurgical tools.

Policy Relevant Mental Health Services Research (PI: Prudic; col: Lisanby) 7/1/07-3/31/08 New York State Office of Mental Health

Electroconvulsive Therapy in Chronically Psychotic Patients: Towards Evidence Based Treatment

The goal of this project is to improve the quality of ECT care in the OMH system. First, we will review the evidence base for the efficacy of ECT in patients with chronic persistent mental illnesses. Second, we will analyze the available data on ECT utilization within the OMH system. Third, we will develop quality indicators to capture variations in ECT service delivery linked to outcome in this population.

Pilot Study Award (PI: Stanford, col: Lisanby)
Irving Institute for Clinical and Translational Research

7/1/07-7/1/08

Neurocircuitry of Negative Symptoms of Schizophrenia: FMRI and TMS studies This project uses fMRI to identify and TMS to probe neural circuitry involved in negative symptoms of blunted affect, amotivation, and anhedonia.

NARSAD Young Investigator Award (Mentor= Lisanby, PI= Mantovani) 7/1/07-6/30/10 National Alliance for Research on Schizophrenia and Depression

rTMS in the treatment of panic disorder with comorbid major depression This project examines the antidepressant and antipanic efficacy of rTMS to the right dorsolateral prefrontal cortex.

NARSAD Young Investigator Award (Mentor= Lisanby, PI= Sporn) 7/1/07-6/30/10 National Alliance for Research on Schizophrenia and Depression

Genetic Predictors of Antidepressant Response to repetitive Transcranial Magnetic Stimulation (rTMS) in Treatment Resistant Depression

This project examines genetic polymorphisms that may predict antidepressant response to rTMS in unipolar depression.

NARSAD Young Investigator Award (Mentors= Lisanby, Arango, PI= Scalia) 7/1/07-6/30/09 National Alliance for Research on Schizophrenia and Depression

The effects of convulsive therapies for depression on the neuronal organization of the hippocampus

This project examines cell fate determination of new cells in dentate gyrus induced by electroconvulsive shock and magnetic seizure therapy in monkeys.

Janssen Translational Neuroscience Fellowship (PI-Segal; Mentors-Lisanby, Moore, Parsey)
7/1/08-6/30/09

Neurochemical effects of DBS to BA25: Translational studies in baboons and depressed patients

This study examines the mechanisms of action of DBS using microdialysis in baboons and PET in human.

TRANSFORM Translational Certificate Program (PI: Deng, Mentor: Lisanby) 7/1/08 – 6/30/09 NIH CTSA

\$42,172

Field Shaping and Coil Design for Transcranial Magnetic Stimulation (TMS).

Dissertation Supervisors: Drs. Shepard and Peterchev (Electrical Engineering)

TRANSFORM Translational Certificate Program (PI: Yu, Mentor: Lisanby) 7/1/08 – 6/30/09 NIH CTSA

\$42,172

Dissertation Supervisor: Dr. Sulzer (Psychiatry, Neurology, and Pharmacology)

Departmental and University Committees

Sarah H. Lisanby, MD

1997-1999	Chair, Emergency Medical Services Work Group, New York State Psychiatric Institute.
1997-present	Columbia Psychiatry Residency Selection Committee
1999-present	Chair, Nonhuman Primate Interest Group, New York State Psychiatric Institute
2005-2006	Department of Biological Psychiatry Executive Committee
2005-2006	Director, Columbia Depression Developing Center
2006-present	Women's Faculty Committee
2007-present	Member, Institutional Review Board, New York State Psychiatric Institute
2007- present	Residency Training Director Search Committee, Columbia Department of Psychiatry
2007-present	Advisory Group to the General Clinical Research Unit (GCRU)
2008-present	Chief of Comparative Medicine Search Committee, New York State Psychiatric Institute
2008-present	Executive Advisory Committee [Advisory group to the Chair of Psychiatry], Columbia Department of Psychiatry
2008-present	PI 5 South Users' Group [Advisory group to the inpatient psychiatry unit]
2008-present	Grand Rounds Committee, Columbia Department of Psychiatry

Teaching Experience and Responsibilities

<u>Undergraduate</u>

- Mentor to undergraduate honors students for their honors thesis in research
- Mentor to NIH sponsored minority student fellowship
- Duke Summer Shadowing Program Mentor Mentored Mentored pre-medical undergraduate women for summer research experiences.
- <u>Summer Training on Aging Research Topics Mental Health (START-MH) Mentor</u>

Medical Student

- Served as preceptor for the Medical Student Human Behavior course, which enrolled
- Coordinated the Basic Psychopathology Seminar Series for medical students that enrolled
- Served as the coordinator for the 3rd year medical student psychiatry rotation, which enrolled
- Elected by the Duke Medical School Class for the Medical Student Teaching Award
- Provide bedside teaching on electroconvulsive therapy (ECT) during their psychiatry rotations,
- Supervise Stanley Scholar students for summer research projects,

- Supervise Columbia Medical Students for research rotations,
- Supervised Medical Students from other Medical Schools for electives at Columbia,
- Lecture to the Stanley Scholar student seminar
- Serve as mentor to a Doris Duke Medical Student Research Fellow
- Provide clinical supervision to MD/PhD students during their research years
- Serve as research mentor to premedical students for summer research projects conducted at Columbia University through the Duke Health Careers Advising Program many were subsequently admitted to medical schools across the country.
- Three former Research Assistants were subsequently accepted to Columbia Medical School, and one of these achieved co-authorship prior to matriculation.
- Thirteen former Research Assistants were subsequently accepted to other medical school across the country, and 9 of these achieved co-authorship prior to matriculation.
- Serve as preceptor to Columbia MD/PhD students in the Clinical Competence Course
- Summer Training on Aging Research Topics Mental Health (START-MH) Mentor
- Elective Rotation in Brain Stimulation
- Doris Duke Clinical Research Fellowship Program Mentor

Resident

- Co-coordinator, Psychiatry Residency PGY-1 Class, Duke University Medical Center, 1994-95.
- Clinical Supervisor of 1995-1998.
 Creedmoor Psychiatric Center,
- PRITE fellow and three years on the Editorial Board of the PRITE In Training Exam).
- Supervision of Psychiatry and and surgeons and Surgeons, 1995-present.
- Director, Visiting Fellowship in Electroconvulsive Therapy, Columbia College of Physicians and Surgeons, 1996-present, 4 hours per course, 4 courses per year – opened free to residents, fellows, and other trainees
- Director, Visiting Fellowship in Transcranial Magnetic Stimulation, Columbia College of Physicians and Surgeons, 2005-present, 4 hours per course, 4 courses per year – opened free to residents, fellows, and other trainees
- PGYII Lecture Series on Medical Emergencies in Psychiatry, Columbia College of Physicians and Surgeons, 1997-1999.
- Columbia Psychopharmacology Center Clinical Supervisor, Psychopharmacology Supervisor of PGY-3 Psychiatry Residents, Columbia College of Physicians and Surgeons, 1997-1999.

- Director of TMS/VNS Departmental Seminar Series, 1997-present.
- PGY IV Introductory lectures on Brain Imaging Techniques in Psychiatry, Columbia College of Physicians and Surgeons, 11/17/97.
- Co-Director, Interdisciplinary Study Group on Neuroscience and Psychoanalysis. Columbia College of Physicians and Surgeons, 1998-2000.
- PGYII-PGYIII course lecturer for "Clinical Neurobiology & psychopharmacological algorithms." Course directors: Jeremy Coplan and Jay Gingrich. 1999-2006
- Research Fellows Seminar on Translational Research, Columbia College of Physicians and Surgeons, 2/16/99.
- Course co-Director, PGYIV Seminar "Neural Circuitry of Psychiatric Disorders," 1999present.
- Course co-Director, PGYII "Brain and Mind", 2005-present.
- Lectures to General Clinical Research Unit on TMS and Depression, discussant for GCRU Journal Clubs, 2000-present
- Brain Stimulation Journal club Founder and Director, 2006-present.
- Sergievsky Center Seminar Series lecturer, 2003-present.
- Intensive Outpatient Program (IOP) Resident seminars, 2006-present.
- Supervised for research electives, culminating in:
 - o 2 institutional grants (Cogent Award, Frontier fund)
 - 4 peer-reviewed publications
 - 2 published abstracts,
 - 1 IRB protocol, 3 IACUC protocols
 - 3 have gone on to do fellowships at Columbia

Graduate Student

•	MS and PhD Dissertation Advisor to Psychology gradu	uate student with	
•	PhD Dissertation Advisor to	in a collaborative p	roiect
	between Sienna University and Columbia University	m a conaborativo p	10,000
•	PhD Dissertation Advisor to	for PhD in Neurops	ychology,
	using TMS/fMRI studies of language in collaboration w		
•	PhD Dissertation co-Advisor to Electrical Engineering	Graduate student or	n TMS
	technology development	vith	of
	Psychiatry and Engineering.		
•	MD Dissertation Advisor to		in a
	collaborative project between Al-Minia University, Egy	ot and Columbia Uni	versity
•	MS Thesis advisor to with		collaboration
	between Psychiatry and Biomedical Engineering		
_	Mentor on PIRSC and Frontier Fund Awards to gradus	ata etudante	

- Mentor on PIRSG and Frontier Fund Awards to graduate students
- Biology of Neurologic and Psychiatric Disorders Lecturer (Rene Henn course director), 2007-present.
- Neuropsychopharmacology Graduate Student Course lecturer (Jonathan Javitch course director), 2006-present.

• Behavioral Neuroscience (PSYC G9410), Graduate Student Course Lecturer (Rae Silver course director), 2008-present.

Postdoctoral Fellow Teaching Responsibilities



Junior and Mid-Career Faculty Development

- Mentored faculty
- Supported promotions to Assistant, Associate, and Professor Level
- Mentoring faculty
- Mentoring persons with disabilities

CME Courses

- Columbia TMS CME Course Director (2005-present)
- Columbia ECT CME Course Director (2003-2006), Lecturer (1995-2003)
- Columbia Translational Neuroscience Course Lecturer (Course Directors: Jack Martin, John Koester, Michael Goldberg, John Krakauer), 2008-present
- Co-Chair, TMS Certificate Course, Association for Convulsive Therapy, 2008-present.

Pre- and Postdoctoral Trainees for the Past Ten Years

Other Professional Activities

2006-2009	Data Safety and Monitoring Board (DSMB) Chairperson – NorthStar Trial of Cortical Stimulation for the treatment of major depression.
2007-present	Agency for Healthcare Research and Quality (AHRQ) Technical Expert Group members for a new CER on Non-pharmacologic Treatment of Depression
2008-present	Agency for Healthcare Research and Quality's Evidence-Based Practice Centers (EPCs) Technical Expert Panel (TEP) nonpharmacologic treatments for refractory depression

Patents / Inventions



5. U.S. Patent Application filed on "Methods, Apparatus, and Systems for Magnetic Stimulation." Inventors: Angel Vladimirov Peterchev; Sarah Lisanby; Zhi-De Deng. Filing Date: August 4, 2008, Serial No. 61/086,080.

Public Education and Outreach

- Appearances on National Radio: NPR Morning Edition, NPR "The Infinite Mind", NPR "Talk of the Nation", NPR "The Leonard Lopate Show" 8/21/09.
 4.
 5.
- 6. Letter to the Editor on ECT: Marie Claire, March 2010, pp. 24.

Publications

Original Peer-Reviewed Articles

* denotes first or senior author

Published Articles

1993

 *Lisanby, S.H., McDonald, W.M., Massey, E.W., Doraiswamy, P.M., Rozear, M., Boyko, O.B., Krishnan, K.R., Nemeroff, C.: Diminished Subcortical Nuclei Volumes in Parkinson's Disease by MR Imaging. Journal of Neuraltransmission, 1993, Suppl 40:13-21.

1998

- 2. *Lisanby, S.H., Devanand, D.P., Nobler, M.S., Prudic, J., Mullen, L., Sackeim, H.A.: Exceptionally high seizure threshold: ECT device limitations. Convulsive Therapy, 1996, 12:156-164.
- 3. *Lisanby, S.H., Devanand, D.P., Prudic, J., Nobler, M.S., Fitzsimons, L., Sackeim H.A.: Prolactin response to ECT: Effects of electrode placement and stimulus dosage. Biological Psychiatry, 1998, 43:146-155.
- 4. *Lisanby, S.H., Kohler, C., Swanson, C., Gur, R.: Psychosis secondary to brain tumor. Seminars in Clinical Neuropsychiatry, 1998, 3(1):12-22.

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5. Devanand, D.P., Lisanby, S.H., Nobler, M.S., Sackeim, H.A.: The relative efficiency of altering pulse frequency or train duration when determining seizure threshold. Convulsive Therapy. 1998, 14:227-235.

6. Devanand, D.P., Lisanby, S.H., Lo, E., Fitzsimons, L., Cooper, T., Sackeim, H.A.: Effects of electroconvulsive therapy on plasma vasopressin and oxytocin. Biological Psychiatry. 1998, 44:610-616.

1999

- 7. George, M.S., Lisanby, S.H., Sackeim, H.A.: Transcranial Magnetic Stimulation: Applications in Neuropsychiatry. Archives of General Psychiatry. 1999, 56:300-311. 2000
- 8. *Lisanby, S.H., Maddox J.H., Prudic, J., Devanand, D.P., Sackeim, H.A.: The effects of electroconvulsive therapy on memory of autobiographical and public events. Archives of General Psychiatry. 2000, 57:581-590.
- 9. Sackeim, H.A., Prudic, J., Devanand, D.P., Nobler, M.S., Lisanby, S.H., Peyser, S., Fitzsimons, L., Moody, B., Clark, J.: A prospective, randomized, double-blind comparison of bilateral and right unilateral ECT at different stimulus intensities. Archives of General Psychiatry. 2000, 57:425-434.
- 10. George, M.S., Sackeim, H.A., Rush, J., Marangell, L.B., Nahas, Z., Husain, M., Lisanby, S., Burt, T., Goldman, J., Ballenger, J.C.: Vagus Nerve Stimulation: A new tool for brain research and therapy. Biological Psychiatry. 2000, 47:287-295.
- 11. Boylan, L.S., Haskett, R.F., Mulsant, B.F., Greenberg, R., Prudic, J., Spignall, K., Lisanby, S.H., Sackeim, H.A.: Determinants of seizure threshold in ECT: Benzodiazepine use, anesthetic dose, and other factors. J ECT. 2000, 16:3-18.
- 12. *Lisanby, S.H. and Belmaker, R.H.: Animal models of the mechanisms of action of repetitive transcranial magnetic stimulation (rTMS): Comparisons with electroconvulsive shock (ECS). Depression and Anxiety. 2000. 12:178-187.
- 13. *Lisanby, S. H., Luber, B., Perera, T., Sackeim, H. A.: Transcranial magnetic stimulation: applications in basic neuroscience and neuropsychopharmacology. International Journal of Neuropsychopharmacology. 2000. 3:259-273.
- 14. *Perera, T., Lisanby, S. H.: Neurogenesis and Depression. Journal of Psychiatric Practice. 2000. 6:322-333.

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15. *Lisanby, S.H., Schlaepfer, T.E., Fisch, H.-U., Sackeim, H. A.: Magnetic Seizure Therapy of Major Depression. Archives of General Psychiatry. 2001; 58: 303-305.

16. *Lisanby, S.H., Luber, B., Finck, A.D., Schroeder, C., Sackeim, H.A.: Deliberate Seizure Induction with Repetitive Transcranial Magnetic Stimulation in NonHuman Primates. Archives of General Psychiatry. 2001. 58:199-200.

- 17. *Lisanby, S. H., Gutman, D., Luber, B., Schroeder, C., Sackeim, H. A.: Sham TMS: Intracerebral measurement of the induced electrical field and the induction of motor-evoked potentials. Biological Psychiatry. 2001; 49: 460-463.
- 18. Sackeim, H.A., Keilp, J.G., Rush, A.J., George, M.S., Marangell, L.B., Dormer, J.S., Burt, T., Lisanby, S.H., Husain, M., Collum, M., Oliver, N., Zyboyan, H.: The effects of vagus nerve stimulation on cognitive performance in patients with treatment-resistant depression. Neuropsychiatry Neuropsychol Behav Neurol. 2001;14(1):53-62.
- 19. Boylan, L. S., Pullman, S. L., Lisanby, S. H., Spicknall, K. E., Sackeim, H. A.: Repetitive transcranial magnetic stimulation to the SMA worsens complex movements in Parkinson's disease. Clinical Neurophysiology. 2001; 112:259-264.
- 20. *Lisanby, S.H., Bazil, C.W., Resor, S.R., Nobler, M.S., Finck, D.A., Sackeim, H.A.: ECT in the Treatment of Status Epilepticus. J ECT. 2001. 17: 210-215.
- 21. Daly, J.J., Prudic, J., Devanand, D.P., Nobler, M.S., Lisanby, S.H., Peyser, S., Roose, S.P., Sackeim, H.A. ECT in bipolar and unipolar depression: Differences in speed of response. Bipolar Disorders. 2001; 3: 95-104.
- 22. Boutros, N.N., Lisanby, S.H., Tokuno, H., Torello, M. W., Campbell, D., Berman, R., Malison, R., Krystal, J. H., Kosten, T.: Elevated Motor Threshold in Drug-Free Cocaine Dependent Patients Assessed with Transcranial Magnetic Stimulation. Biological Psychiatry. 2001. 49:369-373.
- 23. *Wassermann, E. M., Lisanby, S. H.: Therapeutic application of repetitive transcranial magnetic stimulation. Clinical Neurophysiology. 2001. 112(8):1367-1377.
- 24. * Matthews, N., Luber, B., Qian, N., Lisanby, S.H.: Transcranial magnetic stimulation differentially affects speed and direction judgments. Experimental Brain Research. 2001. 140:397-406.
- 25. Boylan, L.S., Devanand, D.P., Lisanby, S.H., Nobler, M.S., Prudic, J., Sackeim, H. A.: Focal prefrontal seizures induced by bilateral ECT. Journal of ECT. 2001. 17:175-179.
- 26. Perera, T., Lisanby, S., Sackeim, H.: Protein Kinase A in major depression: The link between the HPA axis hyperactivity and neurogenesis. CNS Spectrums. 2001. 6:565-572.
- 27. * Lisanby, S. H., Sackeim, H.A.: New developments in convulsive therapy for major depression. Epilepsy and Behavior. 2001. 2:S68-73.

2002

28. * Marangell, L. B., Rush, A. J., George, M.S., Sackeim, H.A., Johnson, C. R., Husain, M.M., Nahas, Z., Lisanby, S. H.: Vagus Nerve Stimulation (VNS) for Major Depressive Episodes: One Year Outcomes. Biol Psychiatry. 2002. 51:280-287.

- 29. Burt, T., Lisanby, S. H., Sackeim, H. A.: Neuropsychiatric applications of transcranial magnetic stimulation: a meta analysis. International Journal of Neuropsychopharmacology. 2002. 5:73-103.
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- 35. Rosoklija G., Mancevski B, Ilievski B, Perera T, Lisanby S. H., Coplan, J.D., Duma A., Serafimova T., Dwork, A.J.: Optimization of Golgi methods for impregnation of brain tissue from humans and monkeys. J Neurosci Methods. 2003. 131:1-7.
- 36. *Lisanby, S.H., Moscrip, T., Morales, O., Luber, B., Schroeder, C., Sackeim, H.A.: Neurophysiological characterization of magnetic seizure therapy (MST) in nonhuman primates. Clinical Neurophysiology. 2003;56:81-99.
- 37. Belmaker, B., Fitzgerald, P., George, M.S., Lisanby, S.H., Pascual-Leone, A., Schlaepfer, T.E., Wassermann, E.: Managing the risks of repetitive transcranial magnetic stimulation: International Society for Transcranial Stimulation Consensus Statement. CNS Spectrums. 2003. 8:489.

38. *Lisanby, S. H., Morales, O., Payne, N., Kwon, E., Fitzsimons, L., Luber, B., Nobler, M. S., Sackeim, H. A.: New developments in electroconvulsive therapy and magnetic seizure therapy. CNS Spectrums. 2003. 8:529-536.

2004

- 39. *Dwork, A.J., Arango, V., Underwood, M., Ilievski, B., Rosoklija, G., Sackeim, H.A., Lisanby, S.H.: Absence of histological lesions in primate models of electroconvulsive therapy (ECT) and magnetic seizure therapy (MST). Am J Psychiatry. 2004;161(3):576-8.
- 40. *Morales, O.M., Sackeim, H.A., Berman, R.M., Lisanby, S.H.: Magnetic seizure therapy: Development of a novel intervention for treatment resistant depression. Clinical Neuroscience Research. 2004, 4: 59-70.
- 41. *Lou, H.C., Luber, B., Crupain, M., Keenan, J.P., Nowak, M., Kjaer, W., Sackeim, H.A., Lisanby, S.H.: Parietal cortex and representation of the mental self. PNAS. 2004;101:6827-32.
- 42. *Moscrip, T.D., Terrace, H. S., Sackeim, H. A., Lisanby, S. H.: A primate model of anterograde and retrograde amnesia produced by convulsive treatment. J ECT. 2004;20:26-36.

2005

- 43. Nahas, Z., Marangell, L. B., Husain, M. M., Rush, A. J., Sackeim, H. A., Lisanby, S. H., Martinez, J. M., George, M. S.: Two-year outcome of vagus nerve stimulation (VNS) for the treatment of major depressive episodes. J Clin Psych. 2005;66:1097-1104.
- 44. Boutros, N. N., Lisanby, S. H., McClain-Furmanski, D., Oliwa, G., Gooding, D., Kosten, T. R.: Cortical excitability in cocaine-dependent patients: A replication and extension of TMS findings. J Psychiatric Research. J Psychiatr Res. 2005;39:295-302.
- 45. *Morales, O. G., Henry, M.E., Nobler, M.S., Wassermann, E.M., Lisanby, S.H.: Electroconvulsive therapy (ECT) and repetitive transcranial magnetic stimulation (rTMS) in children and adolescents: A review and report of two cases of epilepsy partialis continua. Child and Adolescent Psychiatric Clinics of North America. 2005. 14:193-210.
- 46. *Stanford AD, Husain MM, Luber B, Berman R, Truesdale M, McClintock S, Lisanby SH. Magnetic Seizure Therapy and Other Convulsive Therapies. Primary Psychiatry. 2005. 12(10):44-50.

47. *Moscrip TD, Terrace HS, Sackeim HA, Lisanby SH: Randomized controlled trial of the cognitive side effects of magnetic seizure therapy (MST) and electroconvulsive shock (ECS). IJNP. 2006;9:1-11.

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- 53. Bajbouj, M., Gallinat, J., Lang, U.E., Hellen, F., Vesper, J., Lisanby, S.H., Danker-Hopfe, H., Neu, P.: Motor cortex excitability after vagus nerve stimulation in major depression. Journal of Clinical Psychopharmacology. 2007;27:156-159.



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- 59. *Luber, B., Balsam, P., Nguyen, T., Gross, M., and Lisanby, S.H.: Classical Conditioned Learning Using Transcranial Magnetic Stimulation. Experimental Brain Research. Exp Brain Res. 2007; 183(3):361-369.
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- 140. *Lisanby, S.H.: TMS today and tomorrow. Association for Convulsive Therapy Annual Meeting. May 17, 2009. San Francisco, CA.
- 141. *Lisanby, S.H. and Sampson, S., co-Chairs: TMS Certificate Course. Association for Convulsive Therapy Annual Meeting. May 18, 2009. San Francisco, CA.
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- 157. *Lisanby, S.H.: Progress Report: Revising the APA Task Force Report on ECT. Invited Lecture. International Society for Neurostimulation (ISN) Annual Meeting. May 23, 2010. New Orleans, LA.

158. *Lisanby, S.H.: Hot Topics in TMS. Invited Lecture. International Society for Neurostimulation (ISN) Annual Meeting. May 23, 2010. New Orleans, LA.

- 159. *Lisanby, S.H.: Regulations and Policies Concerning TMS. Invited Lecture. International Society for Neurostimulation (ISN) TMS Certificate Course. May 24, 2010. New Orleans, LA.
- 160. George, M.S., Lisanby, S.H., Avery, D.H., McDonald, W.M., Durlaski, V., Pavlicova, M., Anderson, B., Nahas, Z., Bulow, P., Zarkowski, P., Holzheimer, P., Schwartz, T., Sackeim, H.: Daily left prefrontal TMS for major depression: A sham-controlled multi-site randomized trial (NIH Optimization of TMS for Depression Study, OPT-TMS). JECT. 2010;26:152-153. International Society for Neurostimulation (ISN) Annual Meeting. May 23, 2010. New Orleans, LA.
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- 166. *Lisanby, S.: How do you create a TMS Sham? Symposia Lecture. 163rd Annual Meeting of the APA, New Orleans, LA, May 24, 2010. Syllabus Book, Abstract No. 83-D, page 154.
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- 168. *Lisanby, S.H. Back to the Future: Brain Stimulation in Psychiatry. Invited Lecture. June 15, 2010. 50th Anniversary Meeting. NCDEU, Boca Raton, FL.

169. *Chen, C.-M., Kegeles, L., Lisanby, S.H.: GABA, Neuronal synchrony and neurocognitive efficiency in schizophrenia. Poster Presentation. 50th Anniversary Meeting. NCDEU, Boca Raton, FL.

- 170. *Rosa, M.A., Schroeder, C.S., Lisanby, S.H.: Theta-burst stimulation for the treatment of depression: Efficacy, safety and mechanisms. Poster Presentation. 50th Anniversary Meeting. NCDEU, Boca Raton, FL.
- 171. McClintock, S.M., Cullum, C.M., Rodez, C., Lisanby, S.H., Husain, M.M., Bernstein, I., Terrace, H.: Associations between Human Demographic Characteristics and Performance on the Columbia University Primate Cognitive Battery. International College of Geriatric Pyschoneuropharmacology (ICGP) 10th Annual Meeting, Athens, Greece, September 2010.
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